

REMARKS

This is in response to the Office Action dated April 2, 2003. New claims 13-16 have been added. Thus, claims 1-16 are now pending. Attached hereto is a marked-up version of the changes made to the claim(s) by the current amendment. The attached page(s) is captioned "Version With Markings To Show Changes Made." It is noted that no independent claim has been amended herein.

For purposes of example, and without limitation, certain example embodiments of this invention relate to a method of making a semiconductor device including a silicide film. In the Fig. 1 embodiment for example, a gate electrode 14 and source/drain regions 16, 17 are formed so as to be supported by a semiconductor substrate 11. Native oxides 18 naturally form over the gate and/or source/drain regions as shown in Fig. 1A. A first metal inclusive film (e.g., Ti) 20 is formed over the substrate as shown in Fig. 1B. Thereafter, a thermal treatment is performed in order to cause the Ti to react thereby causing the native oxides to be reduced and also to cause a silicide film 25 to form as shown in Fig. 1C. At least an unreacted part of the first metal inclusive film is then removed. Thereafter, a second metal inclusive film (e.g., Co) 21 is formed over at least part of the substrate. Another thermal treatment is performed to cause the Co to react thereby causing a second silicide film 22 to form at least partially in region(s) where the first silicide 25 was formed as shown in Fig. 1D. Example advantages associated with certain embodiments of this invention (e.g., avoiding disadvantages such as the silicide not forming due to native oxide existence) are discussed on page 14 of the instant specification.

Claims 1-12 stand rejected under 35 U.S.C. Section 102(e) as being allegedly anticipated by En (US 6,518,631). This Section 102(e) rejection is respectfully traversed for at least the following reasons.

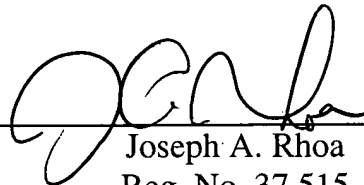
En is not prior art. In particular, En has a U.S. filing date of April 2, 2001, which is well *after* applicants claimed priority date of January 19, 2001. A certified English translation of the priority document is submitted herewith in this respect. Thus, it can be seen that En does not represent prior art to the instant claimed inventions. All rejections must be withdrawn.

All claims are respectfully submitted to be in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

1. (*Unamended*) A method of manufacturing a semiconductor device comprising steps of:

forming a first metal film having a reducing property on a semiconductor substrate;

thermal treating the resulting semiconductor substrate for reducing a native oxide film naturally formed on the semiconductor substrate and for forming a first silicide film on the semiconductor substrate;

removing an unreacted first metal film selectively;

forming a second metal film on the semiconductor substrate; and

thermal treating the resulting semiconductor substrate for forming a second silicide film on a surface of the semiconductor substrate which includes a region where the first silicide film is formed.

2. (*Amended*) A method of manufacturing a semiconductor device according to claim 1, wherein the first metal film [is a]comprises titanium[film].

3. (*Amended*) A method of manufacturing a semiconductor device according to claim 1, wherein the second metal film [is a cobalt film]comprises cobalt.

4. (*Amended*) A method of manufacturing a semiconductor device according to claim [2]1, wherein [a]said thermal treating for reducing the native oxide film and forming the first silicide film [heat treatment] is carried out at a temperature of 500°C or less.

10. (*Amended*) A method of manufacturing a semiconductor device according to claim 1, [wherein the substrate is heated]further comprising heating the substrate when the first metal film is formed and this heating of the substrate also serves as the thermal [treatment]treating for reducing the [natural]native oxide film and forming the first silicide film.

12. (*Unamended*) A semiconductor device manufactured by a method comprising steps of:

forming a first metal film having a reducing property on a semiconductor substrate;

thermal treating the resulting semiconductor substrate for reducing a native oxide film naturally formed on the semiconductor substrate and for forming a first silicide film on the semiconductor substrate;

removing an unreacted first metal film selectively;

~~forming a second metal film on the semiconductor substrate; and~~

thermal treating the resulting semiconductor substrate for forming a second silicide film on a surface of the semiconductor substrate which includes a region where the first silicide film is formed.

Please add the following new claims:

13. (New) A method of making a semiconductor device, the method comprising:
forming a first metal inclusive film having a reducing property over at least a semiconductor substrate;

after forming the first metal inclusive film, thermal treating at least the semiconductor substrate to reduce a native oxide film formed over at least the semiconductor substrate and to form a first silicide film over at least the semiconductor substrate;

forming a second metal inclusive film over at least semiconductor substrate and the first silicide film; and

after forming the second metal inclusive film, thermal treating at least the semiconductor substrate to form a second silicide film which includes a region where the first silicide film was formed.

14. (New) The method of claim 13, wherein the first silicide film is at least partially located at a top portion of a gate electrode.

15. (*New*) The method of claim 13, wherein the second silicide film is at least partially located at a top portion of a gate electrode.

16. (*New*) The method of claim 13, further comprising removing at least part of an unreacted portion of the first metal film after forming the first silicide film but before forming the second silicide film.